

the holotype of *T. rambhae* in the Indian Museum and also collected the sample for me at Chilka lake in 1962.

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REFERENCES

- BERRY, F. H. (1964): Review and Emendation of Family Clupeidae by Samuel F. Hildebrand. *Copeia*, (4): 720-730.
- CHAN, W. L. (1965): A Systematic Revision of the Indo-Pacific Clupeid Fishes of the genus *Sardinella* (Family Clupeidae). *Japanese J. Ichthy.* 12(3-6): 104-118.
- CHAUDHURI, B. L. (1916): Fauna of Chilka lake, Fishes. 1. *Mem. Indian Mus.*, 5(4): 423-424, text fig. 5.
- WHITEHEAD, P. J. P. (1962): A Review of the Indo-Pacific Gizzard Shad Genera *Nematalosa*, *Clupanodon*, and *Konosirus* (Pisces: Dorosomatidae). *Bull. British Mus. nat. Hist. (Zool.)*, 9(2): 87-102.
- (1962): A Contribution to the Classification of Clupeoid Fishes. *Ann. Mag. nat. Hist.*, 13, 5: 737-750.
- (1965): A Review of the Elopoid and Clupeoid Fishes of the Red Sea and Adjacent Regions. *Bull. British Mus. nat. Hist. (Zool.)*, 12(7): 272-276.

11. A NOTE ON THE TORCH (*SOONTHU*) FISHING FOR WHITE-BAIT OFF RAMESWARAM IN PALK BAY

At least two species of White-Bait (genus *Anchoviella*) namely, *A. indica* and *A. commersonii* frequently occur in the fish catches from Palk Bay and the Gulf of Mannar in the vicinity of Mandapam. While adults are caught in limited quantities almost round the year in shore seines, bag nets and trawl nets, young ones of these species are caught in large numbers especially in shore seines, during March-April and September to November. Earlier records do not indicate a substantial catch of white-bait from this area, although they form a greater part of the catch in certain seasons elsewhere along the east and west coasts of India, and are highly esteemed as food fishes both in the fresh and cured condition. However, during the year 1964, the author noticed unusual catches of white-bait by torch fishing, a report on which is given in this note, along with details of this special method of fishing.

Fishing at night using lights of various types and power to attract fishes is extensively carried out in Japan, Thailand and Philippines and certain studies have been conducted on the effect of light on fish shoals, their behaviour, magnitude of the catches, etc. (Charernphol, 1951; Rasalan, 1952; Kawamoto, 1955; Nakai, 1955; Rasalan & Datingaling 1955; Takayama, 1955).

The use of torches in fishing at night in various parts of India was mentioned by Hornell (1938, 1950). According to him, torches are used in conjunction with (i) rafts specially kept to trap the leaping fishes like mullets, (ii) an ordinary sickle where large fishes are attracted by light and are slashed at and hooked out of water and (iii) spears, where any

fish attracted by the blaze is immediately speared. Flying fishes are commonly caught by this method in the Laccadives. In all these cases the principle involved is the attraction of fish to light, and the torches may be made up of bundles of dried coconut leaves, dry jute stems or other cheap combustibles.

A brief reference had been made by Sekharan (1955) to torch fishing for sardines where he stated that 27 tons of fish were landed in 1½ months during 1952. Some observations on *Kelong* fishing using lights were given by Chellappa (1959). Jones (1960) referred to the remarkable attraction of the clupeoid fish, *Spratelloides delicatulus* in the Laccadive Sea near the Bitra Island when the ship's lights were switched on at night and the whole sea around became alive with millions of small, actively darting, fish on the surface. As is evident from earlier observations, while a variety of fishes may be caught by the lure of light at night, generally the method appears most effective for clupeoid fishes, *Anchoviella* being yet another example of this group.

Torch fishing, using what is known as *Soonthu* (=torch) in Tamil in conjunction with *Thattu* (=hand scoop-net) from a canoe, is one of the simplest, indigenous methods of fishing carried out in this region at night, particularly a week before and a week after the new moon. The habit of young fishes to gather around light is exploited in this method, clupeoids including *Sardinella* and *Anchoviella* species being the most common species caught.

The *Soonthu* consists of a bundle of dry palmyra leaves fastened together by a dry coconut leaf. Each bundle is about 8 ft. in length. The *thattu* or hand scoop-net consists of a circular wooden frame, 125 cm. in diameter, to which a piece of cotton net with 1 cm. mesh (knot to knot) is attached. Each fishing unit has a crew of 7 or 8 persons, 6 or 7 torches, and a few hand scoop-nets. The number of units engaged in this method of fishing is 30 but the actual number on each day of fishing may vary. The boats go out for fishing at about 7 p.m. The fishing grounds are located between one to two miles away from the shore, at depths varying from 4 to 6 metres. The fish shoals are first detected and then only the torches are ignited in succession to give continuous illumination. On lighting, fish in the vicinity are attracted and are said to come up to the surface around each boat, and are immediately scooped into the boats. The operation lasts for nearly four hours and the boats return by midnight.

During the four days 10th to 13th August 1964, each boat landed an average of 250 kg. of fish per day, the total catch weighed about 8 metric tons, and when sun-dried was valued at about ten thousand rupees. The following 15 days were moonlit nights and *Soonthu* fishing remained suspended, as fish cannot be attracted as on dark nights. Fishing was carried out on 26th and 27th August and 3rd and 9th September but

catches were poor. It was reported that such large catches were not obtained the previous year and have also not been recorded in 1965 and 1966. The catches were almost purely of white-bait, consisting of *Anchoviella indica* and *A. commersonii* ranging in size from 5 to 8 cm. and 4.5 to 7 cm. respectively in total length. A few stray specimens of *Sardinella gibbosa*, 10 cm. in total length, were also caught.

The fish caught at night are immediately spread on the beach and are allowed to dry in sun up to about 3 p.m. the next day by which time they are completely dry. They are then packed in baskets made of palmyra leaf mats and exported by rail to the interior. Local price of sun-dried fish is about Rs. 1,270 per metric ton.

Soonthu fishing is carried out at Rameswaram usually between April and September by fishermen of the villages of Vadagadu, Pillai-kulam, Narikuzhi and Aryankundu, situated between Thangachimadam and Rameswaram along the Palk Bay coast.

In this connection, the following observations are noteworthy from the fisheries point of view:

1. Torch (*Soonthu*) fishing for white-bait in the area appears more successful when compared to other methods.
2. Possibility of obtaining very good catches of white-bait by this method in certain seasons is indicated.
3. Night fishing grounds for white-bait are usually located off Rameswaram.
4. Young ones (4.5 to 8 cm. in length) of two species of white-bait, *A. indica* and *A. commersonii* contributed to the catches in 1964.

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REFERENCES

- CHARERNPHOL, S. (1951): Indigenous marine fishing gear of Thailand. *Proc. Indo-Pacif. Fish. Coun.* **2**: 108-112.
- CHELLAPPA, D. EDWARD (1959): A note on the night fishing observations from a *Kelong*. *J. Mar. biol. Ass. India* **1**: 93-94.
- HORNELL, J. (1938): The fishing methods of the Madras Presidency, Part II. The Malabar coast. *Madras Fish. Bull.* **27**: 17.
- (1950): Fishing in many waters, Cambridge, pp. 5, 8, 21, 103, 104.
- JONES, S. (1960): *Spratelloides delicatulus* (Bennet) as a potential live-bait for tuna in the Laccadives: *J. Mar. biol. Ass. India* **2**: 103-104.
- KAWAMOTO, N. Y. (1955): Experiments with the fish gathering lamp. *Proc. Indo-Pacif. Fish. Coun.* **6**: 278-280.
- NAKAI, Z. (1955): Do fishing lights affect the fish population? *ibid.*, **6**: 273-274.
- RASALAN, S. B. (1952): Philippine Fisheries, Manila, pp. 58, 61, 62.
- & DATINGALING, B. (1955): Observations on fishing with light in the Philippines, *Proc. Indo-Pacif. Fish. Coun.* **6**: 275.
- SEKHARAN, K. V. (1955): Observations on the *choodai* fishery of Mandapam area. *Indian J. Fish.* **2**: 113-131.
- TAKAYAMA, S. (1955): Fishing with light in Japan. *Proc. Indo-Pacif. Fish. Coun.* **6**: 276-277.